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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/524,967	02/18/2005	Sebastien Roux	034299-622	2950
7590 Thelen Reid & Priest P O Box 640640 San Jose, CA 95164-0640				
EXAMINER				
ALLISON, ANDRAE S				
ART UNIT		PAPER NUMBER		
2624				
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04/18/2008		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/524,967

**Applicant(s)**

ROUX ET AL.

**Examiner**

ANDRAE S. ALLISON

**Art Unit**

2624

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 18 February 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) 1-5 and 8-10 is/are allowed.
- 6) ☒ Claim(s) 6 and 7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 February 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☒ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB-083)  
Paper No(s)/Mail Date February 18, 2005
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Specification***

1. The disclosure is objected to because of the following informalities: The phrase "to a un focal point" should read "to a focal point" because the word "un" should be deleted.

Appropriate correction is required.

### ***Claim Objections***

2. Claim 1 is objected to because of the following informalities: The phrase "points; characterised in that" should read "points; characterized in that " because the word "characterized" is misspelled.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 6-7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5. Claims 6-7 recites the limitation "the general law of evolution" in lines 5-6 of claim 6 and in line 2 of claim 7. There is insufficient antecedent basis for this limitation in the claim.

### ***Allowance***

6. The following is an examiner's statement of reasons for allowance: The most pertinent prior art is Katsevich (US Patent No.: US 7,010,079) and Chen (US Patent No.: US 7,203,272). Katsevich discloses a 3PI algorithm for reconstruction of a tomographic image of an especially mobile and deformable object, the image being a set of values of a property taken by points of the object, comprising the use of: divergent radiation from a focal point and passing through the object, the focal point being mobile about the object; an analytical model of mobility and deformation of the object defined for each position of the focal point; and an analytical calculation process for obtaining said values from totals of the values of the property along projection lines leading to the focal point and passing respectively by the points; characterised in that the model is improved, and is a variable combination being acquired, this combination comprising translations and rotations of the object from an origin, and in that the process of analytical calculation comprises retroprojection of the modified measurements. However, Chen does not expressly disclose weighting of the measurements, this weighting being dependent on the analytical model of mobility and deformation of the object. Chen disclose a reconstruction method which includes the step of weighting of the measurements, this weighting being dependent on the analytical model of mobility

and deformation of the object. Neither Katsevich nor Chen, however, disclose homotheties of the object from an origin and derivation of the measurements weighted following the trajectory of the focal point considering a direction adapted to the model, this direction being kept constant, and obtaining modified measurements.

7. Claims 1-5 and 5-10 are allowed.

### ***Conclusion***

The prior art made part of the record and not relied upon is considered pertinent to applicant's disclosure.

Bruder et al (US Patent No.: US 7,215,805) is cited to teach a method and apparatus for spiral scan computed tomography.

Levkovitz et al (US Patent No.: US 7,085,405) is cited to teach a direction tomographic image reconstruction.

Rodet et al (US Patent No.: US 6,920,240) is cited to teach a method for accelerated reconstruction of a three dimensional image.

Koenig et al (US Patent No.: US 6,888,915) is cited to teach a method for reconstruction of an image of a moving object.

Besson (US Patent No.: US 6,463,118) is cited to teach a CT imaging method.

Tam (US Patent No.: US 6,292,525) is cited to teach a method for using Hilbert transform to simplify image reconstruction.

Tam et al (US Patent No.: US 6,084,937) is cited to teach a method and apparatus for three dimensional computerized topographic imaging method.

Guillemaud et al (US Patent No.: US 5,930,384) is cited to teach a process for reconstruction of a 3D image.

De Murcia et al (US Patent No.: US 5,889,525) is cited to teach a process for the reconstruction of three dimensional images of a mobile or deformable object.

Rodet et al (Pub No.: US 2002/0131650) is cited to teach a method for accelerated reconstruction of a three dimensional image.

Wang (NPL document titled: "A General Cone-beam Reconstruction Algorithm") is cited to teach cone-beam reconstruction algorithm.

Katsevich (NPL document titled: "A general scheme for constructing inversion algorithms for cone beam CT") is cited to teach a more general cone beam inversion formula.

Verily (NPL document titled: "Effects of arbitrary focal spot intensity distribution, detector width, and scanning eccentricity in X-ray computed tomography") is cited to teach a new and fairly general expression for the space-variant PSF.

Yu et al (NPL document titled: "Feldkamp-type VOI reconstruction from super-short-scan cone-beam data") is cited to teach a Feldkamp-type algorithm for the reconstruction of a volume of interest.

Feldkamp et al (NPL document titled: "Practical Cone Beam Algorithm") is cited to teach a method for direct reconstruction of a three-dimensional density function from a set of two-dimensional projections.

Lin et al (NPL document titled: "Visualization of Cardiac Dynamics using Physics-based Deformable Model") is cited to teach a method for modeling the intricate non-linear motion of the Heart.

***Inquires***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrae S. Allison whose telephone number is (571) 270-1052. The examiner can normally be reached on Monday-Friday, 8:00 am - 5:00 pm, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Meta can be reached on (571) 272-7453. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2624

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Andrae Allison

/Andrew W. Johns/  
Primary Examiner, Art Unit 2624

April 11, 2008  
A.A.